



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/824,771	04/04/2001	Karl J. Urquhart	016499-706	1436

7590 02/03/2004

E. Joseph Gess, Esq.
BURNS, DOANE, SWECKER & MATHIS, L.L.P.
P.O. Box 1404
Alexandria, VA 22313-1404

EXAMINER

CINTINS, IVARS C

ART UNIT	PAPER NUMBER
----------	--------------

1724

DATE MAILED: 02/03/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/824,771

Applicant(s)

URQUHART ET AL. 

Examiner

Ivars C. Cintins

Art Unit

1724

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 September 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3-46 and 48-50 is/are pending in the application.
- 4a) Of the above claim(s) 15-18 and 34-45 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3-14,19-33,46 and 48-50 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

Art Unit: 1724

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 3-14, 19, 23-33, 46 and 48 are rejected under 35 U.S.C. 103(a) as being unpatentable over Haslett (U.S. Patent No. 1,774,004). As pointed out in the previous Office action, Haslett discloses an apparatus for purifying a liquid, which apparatus includes a plurality of serially connected cartridges containing liquid purification material, retaining screens, and threaded connectors (see Figs. 1-3; page 1, lines 39-44, 48-52 and 66; and page 2, lines 1-2 and 12). Accordingly, this reference discloses the claimed invention with the exception of the length, diameter and length to diameter ratio of the cartridge, and the material from which this cartridge is constructed (claims 10 and 31). However, it would have been obvious to one of ordinary skill in the art at the time the invention was made to employ cartridges having the recited dimensions in the system of Haslett, in order to ensure that these cartridges are capable of containing an effective amount of treatment material. Also, it would have been obvious to one of ordinary skill in the art at the time the invention was made to construct these primary reference cartridges from a perfluoroalkoxy polymer (PFA), since this material is both lightweight and durable.

Claims 49 and 50 are rejected under 35 U.S.C. 103(a) as being unpatentable over Haslett as applied above, and further in view of Moses (U.S. Patent No. 4,305,826). The modified primary reference discloses the claimed invention with the exception of the presence of a resin in the cartridge. Moses teaches that zeolites have been replaced by cation exchange resins in modern water softening systems because they have a much higher exchange capacity (see col. 1,

Art Unit: 1724

lines 45-50). Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to substitute the cation exchange resin of Moses for the zeolite of Haslett, in order to obtain the advantages disclosed by this secondary reference for the system of the modified primary reference.

Claims 1, 3-14, 19, 20, 23-33, 46 and 48-50 are rejected under 35 U.S.C. 103(a) as being unpatentable over Crofts et al. (U.S. Patent No. 5,215,665). Crofts et al. discloses purifying hydrogen peroxide with an ion exchange cartridge (see col. 4, lines 62-64). This reference further teaches (col. 1, line 34) that the purification could occur in a semiconductor facility. Accordingly, this reference discloses the claimed invention with the exception of the length, diameter and length to diameter ratio of the cartridge, the material from which this cartridge is constructed (claims 10 and 31), and the use of a plurality of cartridges (claim 19). However, it would have been obvious to one of ordinary skill in the art at the time the invention was made to employ cartridges having the recited dimensions in the system of Haslett, in order to ensure that these cartridges are capable of containing an effective amount of treatment material. Also, it would have been obvious to one of ordinary skill in the art at the time the invention was made to construct these primary reference cartridges from a perfluoroalkoxy polymer (PFA), since this material is both lightweight and durable. Furthermore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to employ a plurality of cartridges in the reference system, in order to increase its treatment capacity.

Claims 21 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Crofts et al. as applied above, and further in view of Casolo (U.S. Patent No. 3,985,648). The modified primary reference discloses the claimed invention with the exception of the recited arrangement

Art Unit: 1724

of cartridges. Casolo discloses a liquid purification system comprising a plurality of groups of cartridges (see col. 3, line 8; and col. 4, line 49) connected in parallel, wherein each group comprises cartridges connected in series (see Fig. 2). This reference further discloses the specific purification materials recited in claim 22. Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the system of the modified primary reference with the additional purification cartridges of the secondary reference, in order to obtain additional purification capability for the liquid undergoing treatment in this modified primary reference system.

Applicant's arguments filed September 12, 2003 have been noted and carefully considered but are not deemed to be persuasive of patentability. Applicant argues that Haslett discloses a basic water softening device, but neither teaches nor suggests a device for safely purifying liquids such as hydrogen peroxide, hydrofluoric acid or hydrochloric acid. It is pointed out, however, that the intended use of a device is not a structural limitation, and hence cannot be relied upon to patentably distinguish apparatus claims. It is well settled that a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus satisfying the claimed structural limitations. *Ex parte Masham*, 2 USPQ2d 1647 (1987).

Applicant also argues that the recited length, diameter and ratio are not obvious because one of ordinary skill in the art would certainly recognize that physical design aspects that effect flow characteristics and contact time must be carefully considered when designing a chemical purification system. Again, this argument has been noted and carefully considered, but is not deemed to be persuasive of patentability. Initially, it is pointed out that since the cartridges of

Art Unit: 1724

Haslett and Crofts et al. have some length and some inside diameter, these cartridges will also inherently have some ratio of this length to diameter. Accordingly, one of ordinary skill in the liquid purification art would have been motivated to employ cartridges having the recited dimensions in the above noted purification systems, in order to ensure that these cartridges are capable of containing an effective amount of treatment material. Although Applicant's response enumerates several purported advantages over the prior art systems, it is noted that Applicant has provided no evidence, such as comparative data, to support such allegations and conclusions. Mere conclusory statements, unsupported by objective evidence, are entitled to little weight in determining patentability. Cf. *In re Greenfield*, 571 F.2d 1185, 1188, 197 USPQ 227, 229 (CCPA 1978).

Applicant also points out that Crofts et al. discloses a *membrane* that has been impregnated with ion exchange resins. The significance of this observation is not readily apparent, however, since the claims in this application do not appear to preclude the presence of such a membrane.

Applicant also argues that Casolo teaches pH adjustment of the liquid undergoing treatment at predetermined points in the flow path, which would simply be *adding an impurity* in the present invention. Again, this argument has been noted and carefully considered, but is not deemed to be persuasive of patentability. It is pointed out that Casolo is relied upon only for the teaching of utilizing a plurality of groups of cartridges (see col. 3, line 8; and col. 4, line 49) connected in parallel, wherein each group comprises cartridges connected in series (see Fig. 2), and for the specific purification materials recited in claim 22, not for any pH adjustment step. In any event, one of ordinary skill in the fluid purification art would readily recognize that if such a

Art Unit: 1724

pH adjustment treatment were not necessary, or not desired, in the proposed combination of references, then this step could simply be eliminated from the proposed modification.


THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to I. Cintins whose telephone number is (571) 272-1155. The examiner can normally be reached on Monday through Friday from 8:30 AM to 5:00 PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Blaine Copenheaver, can be reached at (571) 272-1156.

The centralized facsimile number for the USPTO is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (571) 272-0987.


Ivars C. Cintins
Primary Examiner
Art Unit 1724

I. Cintins
January 24, 2004